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Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF SECRETARY

In the Matter of)

)
Amendment of Parts 22, 90, and 94
of the Commission's Rules to Permit
Routine Use of Signal Boosters)

WT Docket No. 95-70

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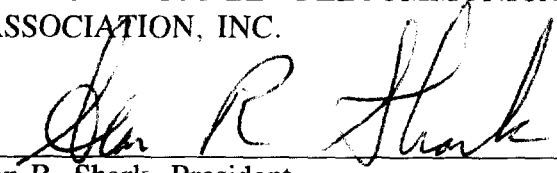
To: The Commission

COMMENTS OF THE
AMERICAN MOBILE TELECOMMUNICATIONS ASSOCIATION, INC.

Respectfully submitted,

AMERICAN MOBILE TELECOMMUNICATIONS
ASSOCIATION, INC.

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**Amendment of Parts 22, 90 and 94
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COMMENTS

The American Mobile Telecommunications Association, Inc. ("AMTA" or "Association"), in accordance with Section 1.415 of the Federal Communications Commission ("FCC" or "Commission") Rules and Regulations, respectfully submits its Comments in the above-entitled proceeding.^{1/} AMTA supports the Commission's proposal to the extent it would permit routine, but carefully defined, use of one-way and two-way signal boosters by licensees of systems authorized under Parts 90 and 94 of the FCC Rules.^{2/} The use of signal boosters to provide coverage in portions of a system's authorized service area otherwise unreachable because of man-made or natural terrain barriers will permit improved communications capability. However, the Association remains concerned about the possibility of interference from these devices, particularly the so-called Class B broadband signal boosters when operating in a congested channel

^{1/} In the Matter of Amendment of Parts 22, 90 and 94 of the Commission's Rules to Permit Routine Use of Signal Boosters, WT Docket No. 95-70, RM-8200 (Released June 22, 1995) ("Notice"). The Commission extended the deadline for filing comments and reply comments in this proceeding to August 14, 1995, and September 1, 1995, respectively. Order, WT Docket No. 95-70, RM-8200 (Released July 12, 1995).

^{2/} AMTA has no comments on the use of signal boosters by Part 22 operators.

environment. It therefore recommends certain measures intended to reduce the likelihood of destructive interference, and conditions its support for the proposal on adoption of a signal booster notification program.

I. INTRODUCTION

AMTA is a nationwide, non-profit trade association dedicated to the interests of the specialized wireless communications industry.^{3/} The Association's members include trunked and conventional 800 MHz and 900 MHz Specialized Mobile Radio ("SMR") service operators, licensees of wide-area SMR systems, and commercial licensees in the 220 MHz band. The two-way systems operated by all of these membership categories are licensed under Part 90 of the FCC's Rules; their microwave facilities are authorized under Part 94. Thus, the Association has a significant interest in the outcome of this proceeding.

II. BACKGROUND

The Commission's proposal is responsive to a Petition for Rule Making from TX RX Systems, Inc. ("TX RX") requesting that Parts 22, 90 and 94 of the FCC Rules be amended to permit routine use of one-way and two-way signal boosters.^{4/} In the Notice, the Commission has defined a signal booster as a device that automatically receives,

^{3/} These entities had been classified as private carriers prior to the 1993 amendments to the Communications Act. See Omnibus Budget Reconciliation Act of 1993, Pub. L. No. 103-66, Title VI § 6002(b), 107 Stat. 312, 394 ("Budget Act").

^{4/} Petition for Rule Making, RM-8200, filed on February 25, 1993. Comments on the Petition were filed by Allen Telecomm Group ("ATG"), Celwave, the Jack Daniel Company ("Daniel"), Motorola, Inc. and the Utilities Telecommunications Council ("UTC"). Reply comments were submitted by TX RX.

amplifies, and retransmits on a one-way or two-way basis, the signals received from base stations, mobile and portable units, with no change in frequency or authorized bandwidth. Notice at ¶ 6. The Notice indicates that these devices are utilized to "improve communications in locations within the normal coverage area of a radio system where the signal is blocked or shielded due to natural terrain or man-made obstacles (e.g. to provide fill-in coverage but not increase the normal coverage area). Notice at ¶ 2. Illustrative examples of instances in which signal boosters accomplish that function include tunnels, below-ground parking garages, and aircraft hangers. Id. The FCC has noted that a form of signal booster, commonly referred to as a cellular repeater, is used routinely to enhance the coverage of cellular systems, but that the use of such devices in comparable Part 22, 90 and 94 services currently is limited to specified Business Radio frequencies available for activities relating to the servicing and supplying of aircraft at designated airports. Notice at ¶ 4.

The Commission has proposed to classify signal boosters either as narrowband (Class A) which amplify only those discrete frequencies intended to be retransmitted, or as broadband (Class B) which amplify all signals within the passband of the signal booster filter. Notice at ¶ 6. Under this proposal, either class of booster could be used, based solely on the requirements of the individual licensee. However, the FCC would place on the operators of such devices the exclusive responsibility to eliminate any harmful interference caused to other licensees and the responsibility not to expand their authorized coverage area through the use of signal boosters. Id.

The agency declined to adopt a recommendation from ATG that boosters employ

directional antenna to reduce the possibility of interference caused by the retransmission of undesired co-channel signals. Notice at ¶ 7. It has proposed limiting the total output power of a booster to 500 milliwatts, and has specified that the output power of Class B boosters would be determined by dividing the total available booster power by the number of authorized frequencies being retransmitted. Notice at ¶ 8. It also refused to include in its proposal booster/translators that translate the incoming frequency to a different outgoing frequency. Notice at ¶¶ 9-10. Finally, the FCC agreed with the TX RX proposal that licensees electing to employ these devices **not** be required to obtain specific FCC authorization to do so as long as type accepted equipment is used and all applicable rule requirements are met. Notice at ¶¶ 11-12.

III. DISCUSSION

A. SIGNAL BOOSTERS MUST BE DEPLOYED CAREFULLY IN SERVICES IN WHICH SPECTRUM IS NOT ASSIGNED IN CONTIGUOUS BLOCKS ON A GEOGRAPHIC BASIS

The benefits of utilizing signal boosters to fill in dead spots and otherwise improve system coverage are obvious and essentially undisputed. The physical characteristics of radio propagation dictate that terrain and man-made barriers will impede signal delivery in certain areas, particularly within buildings and underground. Signal boosters enable system operators to rectify these discrete, identifiable areas in which coverage is inadequate or unavailable, and thereby permit more ubiquitous system coverage.

When boosters are employed in an environment in which licensees are assigned blocks of contiguous spectrum throughout a relatively expansive, defined geographic

area, such as the cellular service, they enhance system capability with little or no risk of causing inter-system interference. The frequencies being retransmitted are used exclusively by that system operator throughout that geographic area; any inadvertent problems can be easily identified and corrected.

That situation does not exist in all other services, and clearly is not the model for private services licensed under Part 90 of the FCC Rules. The vast majority of frequencies authorized for Part 90 operations currently are assigned on a shared basis.^{5/} Channels in the bands above 470-512 MHz may be assigned on an exclusive basis under certain conditions, but even then licenses are issued on a site-specific basis. The geographic separation between even "exclusively assigned" co-channel base station facilities often is less than seventy (70) miles, and can be as close as fifty-five (55) miles.^{6/} Mobile and portable units associated with those systems operate in even closer proximity. Moreover, the frequencies assigned to these stations are rarely contiguous, except for trunked systems in the 900 MHz band.^{7/} More typically, there is substantial separation between channels associated with a given station. The frequencies adjacent or interstitial to those assigned to a particular system may be used at sites close to or even co-located with them.

^{5/} 47 C.F.R. 90.173(a), (b); Report and Order and Further Notice of Proposed Rulemaking, In the Matter of Replacement of Part 90 by Part 88 to Revise the Private Land Mobile Services and Modify the Policies Governing Them and Examination of Exclusivity and Frequency Assignment Policies of the Private Land Mobile Radio Services, PR Docket No. 92-235, FCC 95-255 (Released June 23, 1995) ("Refarming Order").

^{6/} 47 C.F.R. § 90.621(b).

^{7/} 47 C.F.R. § 90.617.

In this environment, it is imperative that the Commission adopt appropriate limitations on the use of devices, such as signal boosters, which have the potential to create interference problems, whether inadvertent or intentional. AMTA supports the instant proposal because it incorporates certain measures designed to limit the likelihood of interference. Specifically, AMTA agrees with the FCC's decision to limit to 500 milliwatts the output power of these devices, and to calculate the power levels of Class B boosters based on the number of frequencies being retransmitted. The Association also endorses the FCC's decision to condition the use of these devices on non-interference to other licensees, and the agency's determination that they not be used to extend a licensee's authorized service area. In fact, AMTA recommends that the FCC emphasize their purely secondary nature by explicitly identifying them as secondary in the rules and by specifying that they must cease operation immediately upon notification that they are causing interference to another, properly authorized licensee.

These restrictions are particularly important in light of the FCC's decision to permit the use of both Class A and Class B boosters. The latter have substantially greater interference potential, particularly in congested urban areas where they inevitably will retransmit numerous undesired signals. They are best suited for true in-building or underground use at locations no more than approximately five miles from the primary site and employing highly directionalized antenna. AMTA does not oppose their inclusion in this proposal because the more selective Class A boosters are not generally available unless customized for a particular system application, are significantly more expensive, and are more complex to implement, particularly for multi-channel systems.

The Association anticipates that the industry will select Class A boosters voluntarily because of their superior performance in a heavily congested spectrum environment once the state-of-the-art of this technology advances to a point where they become readily available and cost-efficient. However, it urges the Commission to monitor these developments as well, and to take prophylactic action if appropriate.

B. THE FCC SHOULD ADOPT NOTIFICATION REQUIREMENTS FOR SIGNAL BOOSTERS

In the Notice, the FCC has concluded that because a booster may not be used to extend a station's coverage area, and thus has limited interference potential, there is insufficient justification to require individual licensing of these devices. Notice at ¶ 12. It has proposed that boosters operate without separate authorization subject to the non-interference and regulatory compliance criteria described supra.

AMTA does not share the FCC's very high level of confidence regarding the interference potential of signal boosters. Therefore, it cannot support the Commission's proposal in this respect. The Association does not recommend that signal boosters be individually licensed. However, it strongly encourages the FCC to adopt a registration program for these devices which will enable parties experiencing interference to identify and contact the likely source.

Again, the FCC's approach might work well in a cellular-like environment where the identities and locations of co-channel licensees is readily known. A cellular operator experiencing inter-system interference in a particular part of its CGSA can easily pinpoint the source of the problem.

By contrast, licensees in the services under consideration in this proceeding do

not yet enjoy this type of spectrum environment. They contend with numerous co-channel and adjacent channel licensees in varying degrees of geographic proximity. When interference problems develop, it often is exceedingly difficult to determine the source because of the myriad possible choices. This problem exists today, but it should not be, and need not be, exacerbated by the introduction of signal boosters into this already overpopulated environment.

Therefore, AMTA recommends that the FCC adopt a notification program for signal boosters operated pursuant to and whose signal fall entirely within the service area of an existing authorization. The notification process should be simple for licensees to complete and for the FCC to maintain. The Association recommends that a format similar to that of the FCC Forms 489 or 800A be adopted. The information provided should include the call sign of the authorized station, a contact party's name and telephone number, the location, including coordinates, of the signal booster, and an identification of whether it is a Class A or B device. The FCC would only need to incorporate this information in its publicly available database of facilities and include it in the associated station file. In AMTA's opinion, collecting and making this information available to potentially affected licensees is critical to successful deployment of these devices in the services in question. Therefore, the Association's support for the FCC's proposal is conditioned on its adoption of this recommendation.

IV. CONCLUSION

For the reasons described above, AMTA urges the FCC to proceed expeditiously to adopt rules consistent with the recommendations herein.

CERTIFICATE OF SERVICE

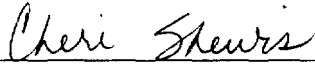
I, Cheri Skewis, a secretary in the law office of Lukas, McGowan, Nace & Gutierrez, hereby certify that I have, on this 14th day of August, 1995, placed in the United States mail, first-class postage pre-paid, a copy of the foregoing Comments to the following:

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